# Time Complexity Analysis of Sorting Algorithms

## Bubble Sort

Best Case: O(n)

Average Case: O(n^2)

Worst Case: O(n^2)

## Insertion Sort

Best Case: O(n)

Average Case: O(n^2)

Worst Case: O(n^2)

## Selection Sort

Best Case: O(n^2)

Average Case: O(n^2)

Worst Case: O(n^2)

## Counting Sort

Best Case: O(n + k)

Average Case: O(n + k)

Worst Case: O(n + k)

## Bucket Sort

Best Case: O(n + k)

Average Case: O(n + k)

Worst Case: O(n^2)

## Radix Sort

Best Case: O(nk)

Average Case: O(nk)

Worst Case: O(nk)